CRD 2007-01

Proposed Equivalent Safety Finding - Airworthiness Standards for emergency landing dynamic conditions on a CS 23 aeroplane
EASA

Commentor:	UK CAA
Paragraph:	2(b) EASA position
Comment:	It is stated:- "The only reason why CS23 requirements were chosen was because night VFR/IFR operations are sought. **This alone does not justify §562 emergency landing dynamic testing**." We disagree with this. The consequences of engine failure at night/IMC are far more hazardous at night than during the day in VMC. The ability to choose a suitable area and carry out a safe forced landing at night/IMC is far more challenging than in day/VMC, and consequently the likelihood of encountering unfavourable surface conditions, such as rough ground and surface obstacles, is significantly increased. Therefore, and contrary to the stated EASA position, it <u>would</u> seem reasonable that the occupant protection standards are enhanced, in accordance with CS 23.562, or equivalent, to cater for this reality.
Justification:	Acceptance of the ESF must be seen to be based on sound justification.
Proposed Text: (if applicable)	
Author's Response:	The Equivalent safety Finding has been mainly based on the fact that the XL-2 is a CS-VLA class aircraft (i.e MTOM 750 kg and stall speed of 45 kts). In addition, the NPA CS-VLA/001 regarding CS-VLA night-VFR operations has been considered. The §562 requirement is not applicable to CS-VLA aircraft and has not been considered for the NPA night-VFR operations due to the reduced kinetic energy which is one of the principles of the VLA concept. The reduced stall speed achieves a reduced impact kinetic energy either in day-VFR operation or night-VFR/IFR operation. This ESF seems reasonable for EASA considering that compared with others CS-VLA class aircraft, Liberty has enhanced occupant protection with the following items:

	- The 4-point harness is assumed to satisfactorily cover the Head Injury Criteria by a rational analysis justifying the “no head contact”. - demonstration by static test of the 18G strength of the seat/harness system Based on the above considerations, this ESF has been granted on clearly sound justification due to the CS-VLA class compliance and that it was stated that any future updates to the XL-2 exceeding the VLA criteria (mass, stall speed) emergency landing dynamic conditions tests shall be performed.

Commentor:	UK CAA
Paragraph:	2 (a) Background and 2(b) EASA position
Comment:	It should be noted that there are different standards between CS-23 and CS-VLA that would reduce the probability of a forced landing. Specific requirements should not be ‘cherry picked’, they are part of a package for which certification is sought.
Justification:	
Proposed Text: (if applicable)	
Author’s Response:	The team agrees with the comment. Nevertheless, as stated in the EASA position, compliance has been shown with FAR/CS 23 for all aspects outside those where the FAA exemption (i.e. § 23.562) has been granted and it has been concluded that the probability of a forced landing has not been increased.